



Research Paper

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Effect of organic and inorganic fertilizers on growth and fruit yield of okra

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Abstract : An experiment was carried out to study the effect of organic and inorganic fertilizers on growth and fruit yield of okra [*Abelmoschus esculentus* (L.) Moench] during the summer season of 2004-2005 at Vegetable Research Station, Junagadh Agricultural University, Junagadh. The result indicated that most of growth and yield attributes remained unaffected due to different treatments. However, significantly the highest no. of branches per plant was produced by the application of vijay growmin @ 625 kg ha⁻¹ along with 50 per cent recommended dose of fertilizer (RDF)(100 kg N + 50 kg P₂O₅ + 50kg K₂O ha⁻¹). Where as, the highest fruit girth was recorded with the application of vijay growmin @ 375 kg ha⁻¹ + RDF and with the application of biovita @ 40 kg ha⁻¹ + RDF. In case of fruit yield, the maximum fruit yield of 166.7 q ha⁻¹ was recorded by the application of vijay growmin @ 500 kg ha⁻¹ + 75 per cent RDF. However, statically, it was at par with application of vijay growmin @ 375 kg ha⁻¹ + RDF, vijay growmin @ 375 kg ha⁻¹ + 75 per cent RDF, vijay growmin @ 500 kg ha⁻¹ + RDF and vijay growmin @ 625 kg ha⁻¹ + RDF.

Key words : Okra crop, Organic, Inorganic fertilizer, Growth and yield parameter, Fruit

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Okra [*Abelmoschus esculentus* (L.) Moench] is an important vegetable crop grown throughout India in *Kharif* as well summer season for its different types of use, nutritive value and increasing export potential. With the increase in population, the demand for the crop has significantly increased, as a result growers are forced to make heavy use of inorganic sources of plant nutrients. Escalating costs of inorganic fertilizers are hampering the way to increase the productivity per unit area. Hence, there is a need to adopt some eco friendly nutrient management system to sustain the soil and soil resources, crop yield and quality and to ensure environmental and human health security (Bhat *et al.*, 2007). Therefore, efforts are being made in this regard to integrate chemical fertilizers with organic manure which are renewable and eco friendly to achieve sustainable productivity with minimum deteriorious effects of chemical fertilizers on soil health and environment. Keeping this in view, the present investigation was undertaken to find out the best combination of organic and inorganic fertilizers for obtaining the maximum fruit yield of okra crop.

RESEARCH METHODS

A field experiment was conducted during the summer season of the year 2004-2005 to study the effect of organic and inorganic fertilizers on growth and fruit yield of okra at Vegetable Research Station, Junagadh Agricultural University, Junagadh. Soil of the experimental area was medium black in texture, low in available nitrogen, high in available phosphorus and medium in available potash. The treatments comprised of total twelve treatment combinations of organic manures *viz.*, vijay growmin, biovita and FYM and different rate of chemical fertilizer dose were tested in Randomized Block Design with three replication. The treatment details are as below.

Seeds were sown at 60 cm x 30 cm spacing on February 15, 2005. The full dose of phosphorus, potash and half dose of nitrogen as per treatments was applied as basal dose, while reaming half dose of nitrogen as per treatments was applied as top dressing at flowering stage. The sources of nitrogen, phosphorus and potash were urea, diammonium phosphate and murate of potash, respectively. Where as, full doe of vijay growmin, biovita and FYM was applied as basal dose. All the